

- 15 -

CLAIMS

1. A process for treating waste water which contains soluble phosphorous and which comprises a solid component and a liquid component, the process including the step of 5 reacting soluble phosphorous from the solid and liquid components with a source of magnesium ions under reaction conditions to produce a phosphorous containing precipitate.

2. A process for treating waste water which contains 10 soluble phosphorous, the process including the step of reacting the soluble phosphorous with a source of magnesium ions in the presence of greater than 20ppm ammonia under reaction conditions to produce a phosphorous containing precipitate.

15

3. A process as claimed in claim 1 or claim 2 wherein the step of reacting the soluble phosphorous with a source of magnesium ions occurs in the presence of dissolved oxygen.

20

4. A process as claimed in any one of the preceding claims wherein the amount of soluble phosphorous in the waste water after the step of reacting the soluble phosphorous is less than 5 mg/L.

25

5. A process as claimed in any one of the preceding claims wherein the source of magnesium ions is magnesium oxide.

30

6. A process as claimed in claim 5 wherein the source of magnesium ions is magnesium oxide granules.

- 16 -

7. A process as claimed in claim 6 wherein the magnesium oxide granules have a granular size in the order of 5 to 20mm.

5 8. A process as claimed in claim 6 or claim 7 wherein the process is conducted in a reaction vessel containing a bed of magnesium oxide granules.

10 9. A process as claimed in claim 5 wherein the source of magnesium ions is magnesium oxide powder,

10. A process as claimed in any one of claims 2-9 wherein an oxygen containing gas is introduced into the waste water to provide a source of dissolved oxygen.

15

11. A process as claimed in claim 10 wherein the oxygen containing gas is air.

20 12. A process as claimed in any one of the preceding claims wherein the phosphorous containing precipitate is a magnesium ammonium phosphate precipitate.

13. A process as claimed in any one of the preceding claims wherein the precipitate is struvite.

25

14. A process for treating waste water which contains soluble phosphorous and which comprises a solid component and a liquid component, the process including the step of reacting soluble phosphorous from the solid and liquid components under reaction conditions to form a magnesium ammonium phosphate precipitate.

- 17 -

15. A process for treating waste water which contains soluble phosphorous, the process including the step of reacting soluble phosphorous in the presence of greater than 20 ppm ammonia under reaction conditions to form a magnesium ammonium phosphate precipitate.

16. A treatment plant for treating waste water from a residential property which contains soluble phosphorous and which comprises a solid component and a liquid component, 10 the treatment plant comprising means for reacting soluble phosphorous from the solid and liquid components of the waste water with a source of magnesium ions under reaction conditions to produce a phosphorous containing precipitate.

15 17. A treatment plant for treating waste water from a residential property which contains soluble phosphorous, the treatment plant comprising means for reacting the soluble phosphorous with a source of magnesium ions in the presence of greater than 20 ppm ammonia under reaction conditions to 20 produce a phosphorous containing precipitate.

18. A treatment plant as claimed in claim 16 or claim 17 wherein the treatment plant is located on or adjacent to the residential property.

25

19. A process substantially as hereinbefore described with reference to the accompanying drawings and/or example.